

What is claimed is:

1. A wiring design system for designing wiring for parts on a wiring board, comprising:

5 input means for inputting logical connection information on said parts on said wiring board and signal group information for handling said connection information as a signal group;

 wiring processing means for determining a wiring path for said parts, said wiring processing means performing steps
10 of

 handling said signal group as a wiring unit for a wiring path search and dividing said signal group into smaller groups, and

 arranging said divided smaller groups such that they
15 run adjacent to one another; and

 output means for outputting wiring path information on said wiring path determined by said wiring processing means.

2. The wiring design system as claimed in claim 1, wherein when dividing said signal group into said smaller groups, said
20 wiring processing means evaluates layout conditions of said parts on said wiring board or a congestion degree of wiring on said wiring board to determine said wiring path.

3. The wiring design system as claimed in claim 1, wherein

said wiring processing means determines said wiring path based on a recommended path which said signal group should follow whenever appropriate.

4. The wiring design system as claimed in claim 1, wherein:

5 when dividing said signal group into said smaller groups, said wiring processing means uses wiring path information obtained as a result of searching for a path for said signal group as a whole;

said wiring processing means registers said wiring path
10 information as a recommended path; and

said wiring processing means recursively repeats said division and said wiring path search using each divided smaller group obtained at a previous recursive step as the new signal group.

15 5. The wiring design system as claimed in claim 4, wherein said wiring processing means recursively repeats said division of said signal group and said wiring path search using each divided smaller group obtained at a previous recursive step as the new signal group until said wiring processing means determines a
20 wiring path for each signal.

6. The wiring design system as claimed in claim 1, wherein said logical connection information is temporary information prepared on the assumption that terminals of each part are

disposed at its center.

7. The wiring design system as claimed in claim 1, wherein
said wiring processing means determines said wiring path by
considering wiring restrictions on wiring length or on
5 neighboring signals.

8. The wiring design system as claimed in claim 1, wherein
said wiring processing means determines wiring by considering
a capacitor or a power cut line on said wiring board.

9. The wiring design system as claimed in claim 1, wherein
10 after determining said wiring path, said wiring processing means
calculates and outputs a congestion degree of wiring.

10. A wiring design method for designing wiring for parts
on a wiring board, comprising:

a first step of inputting logical connection information
15 for wiring said parts and signal group information for handling
said connection information as a signal group;

a second step of handling said signal group as a wiring
unit for searching for a wiring path for said parts, and dividing
said signal group into smaller groups;

20 a third step of evaluating layout conditions of said parts
on said wiring board or a congestion degree of wiring on said
wiring board;

a fourth step of changing a layout of said parts; and

a fifth step of, by considering said layout conditions of said parts on said wiring board or said congestion degree of said wiring on said wiring board, determining an optimum path in such a way that said divided smaller groups run adjacent to one another, and obtaining wiring path information.

11. The wiring design method as claimed in claim 10, further comprising:

a sixth step of, when said fifth step of obtaining said wiring path information is performed, determining said wiring path information based on a recommended path in such a way that said signal group runs within said recommended path or as close to said recommended path as possible,

wherein said sixth step is recursively repeated using the wiring path determined at a previous recursive step as the new recommended path.

12. The wiring design method as claimed in claim 10, wherein when said sixth step is recursively repeated, pin assignments of said parts are optimized.

13. A wiring design method for designing wiring for parts on a wiring board, comprising the steps of:

specifying a temporary part on said wiring board in such a way that a size and a pin assignment of said temporary part are only roughly specified and further specifying a reserved

area for a part on said wiring board;

on the assumption that all terminals of said temporary part are disposed at its center, searching for a path which does not cross said reserved area and obtaining wiring path

5 information; and

replacing said temporary part with an actual part and setting said part on said reserved area to design a more detailed wiring path, wherein a size and a pin assignment of said actual part is specified.

10 14. The wiring design method as claimed in claim 13, wherein when said wiring path information is obtained, a congestion degree of wiring is calculated and output.

15 15. A wiring design method for designing wiring for parts on a wiring board, comprising the steps of:

inputting a temporary wiring board information file, a reserved area file, a temporary parts information file, a temporary connection information file, and a temporary layout information file as temporary information to design wiring,

20 said temporary wiring board information file roughly defining a size of said wiring board,

said reserved area file specifying a reserved area for a part on said wiring board,

said temporary parts information file containing

information on the number and the positions of pins of a temporary part,

 said temporary connection information file
containing connection information which roughly indicates the
5 number of connections between said parts and which is obtained
before pins are fully specified,

 said temporary layout information file roughly
specifying layout positions of said parts;

 performing path search processing based on said temporary
10 information and outputting a path specification information file
for specifying a wiring path;

 sequentially replacing said temporary wiring board
information file, said temporary parts information file, said
temporary connection information file, and said temporary layout
15 information file by an actual wiring board information file,
an actual parts information file, an actual connection
information file, and an actual layout information file,
respectively,

 said actual wiring board information file indicating
20 an actual size of said wiring board,

 said actual parts information file specifying a part
to be actually mounted,

 said actual connection information file specifying

connections to said actual part,

said actual layout information file specifying a layout of said actual part; and

performing path search processing using as a recommended
5 pathsaidwiringpathobtainedbasedonsaidtemporaryinformation
to design a more detailed wiring path.